

Serial No. : New Application
Filed : Concurrently Herewith

IN THE ABSTRACT:

Please delete the abstract of the disclosure on file, and add the following new abstract:

An ultrafine crystal layer forming process of forming an ultrafine crystal layer in a workpiece constituted by a metallic material. The process includes: performing a machining operation on a surface of the workpiece using a machining tool, so as to impart a large local strain to the machined surface of the workpiece, where the machining operation using the machining tool causes the machined surface of the workpiece to be subjected to a plastic working that causes to have large local strain in the form of a true strain of at least 1, such that the ultrafine crystal layer is formed in a surface layer portion of the workpiece that defines the machined surface of the workpiece. Also disclosed are a nanocrystal layer forming process, a machine component having the ultrafine crystal layer or the nanocrystal layer, and a machine component producing process of producing the machine component.